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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/623,568

07/22/2003

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EXAMINER

MOON, SEOKYUN

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

07/06/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/623,568	<b>Applicant(s)</b> SUZUKI ET AL.	
	<b>Examiner</b> Seokyun Moon	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8, 9/5, 11/5-21/5, 30-39, and 40/30-49/30 is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 11/1, 13/1-16/1, 23/22, 25/22, 26/22, 28/22, 42/22 and 44/22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims rejected are 1-4,9/1,10/9/1,12/1,17/1-21/1,22,24/22,27/22,29/22,40/22,41/22,43/22 and 45/22-49/22.

## DETAILED ACTION

### *Response to Arguments*

1. The Applicants' arguments with respect to claims 1-49 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-4 and 17/1** are rejected under 35 U.S.C. 102(b) as being anticipated by Niiyama (JP Pub. 2001-135196).

As to **claim 1**, Niiyama teaches an inputting device ("*sliding switch*") [abstract], which is disposed in an opening of a cabinet surface [figure 1 provided below, which is equivalent to Niiyama's drawing 1], comprising:

an elastic sheet having a top surface and a bottom surface, the top surface disposed on an inside surface of the cabinet including the opening;

a sliding key that is fixed on the top surface of the elastic sheet with at least a portion in the opening of the cabinet surface; and

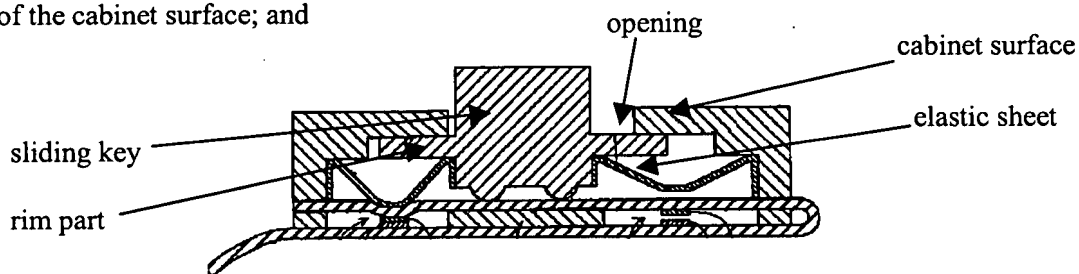


Figure 1

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Sensors (“*electrodes 6a and 6b*”) [drawing 1] that at least detect movement in a horizontal direction that is substantially parallel to the cabinet surface, of the sliding key [pars. (0015) and (0019)].

As to **claim 2**, Niiyama teaches the sliding key having a rim part whose diameter being larger than that of the opening [Figure 1 provided on page 2 of this Office Action].

As to **claim 3**, Niiyama [Figure 1] teaches the inputting device, wherein:

the sliding key is adhered to the elastic sheet at the rim part, and

a space is formed on a portion of the inside surface of the cabinet at a position adjacent to the opening, and

at least a portion of the rim part of the sliding key is disposed in the space.

As to **claim 4**, Niiyama [Drawing 1] teaches the inputting device, comprising:

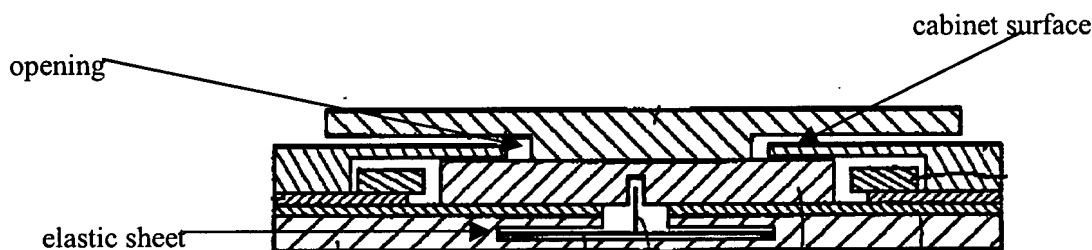
a first control signal generating means (“*printed circuit board 2*”) [par. (0015)] that generates a first control signal corresponding to at least the moved direction of the sliding key detected by the sensors, wherein:

the first control signal executes the change of the position of a subject to be controlled on a display.

As to **claim 17/1**, Niiyama teaches the inputting device comprising at least one of projections (“*electrode 6b*”) [Drawing 1] supporting the sliding key on the inside surface of the elastic sheet.

4. **Claim 1** is rejected under 35 U.S.C. 102(b) as being anticipated by Ikehara et al. (US 6,400,353).

As to **claim 1**, Ikehara teaches an inputting device (“*pointing device*”) [abstract line 1], which is disposed in an opening of a cabinet surface, [Drawing 1 provided below, which is equivalent to Ikehara’s figure 3] comprising:

Drawing 1

an elastic sheet ("*spring 15*") [fig. 3] having a top surface and a bottom surface, the top surface disposed in an inside surface of the cabinet including the opening;

a sliding key (a combination of "*operating portion 8*", "*operation electrode 10*" and "*coupling pin 15a*") [fig. 3] that is fixed on the top surface of the elastic sheet with at least a portion in the opening of the cabinet surface; and

sensors (a combination of "*direction electrode 11*" and "*input electrode 13*") [fig. 3] that at least detect movement in a horizontal direction that is substantially parallel to the cabinet surface, of the sliding key [col. 4 lines 45-53].

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 19/1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Niiyama.

Niiyama does not expressly disclose a nonskid component disposed on the outside surface of the sliding key.

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However, Examiner takes official notice that it is well known in the art to include a nonskid part such as a rubber or a plastic having high friction ratio on the outer surface of an inputting key for electronic devices such as laptop computer, mobile phone, and PDA.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the outside surface of the sliding key of Niiyama being a nonskid portion in order to allow the device user of the inputting device of Niiyama to operate the sliding key more stably.

7. **Claim 21/1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikehara.

Ikehara teaches an inputting device comprising an opening in a cabinet surface and a key formed on the front surface of an elastic sheet and disposed in the opening, as discussed with respect to the rejection of claim 1.

Ikehara does not expressly teach the inputting device comprising a plurality of openings in the cabinet surface and a group of keys formed on the front surface of the elastic sheet and each disposed in a corresponding opening of the plurality of openings.

However, the courts have held that a mere duplication of the components of the device is generally recognized as being within the level of ordinary skill in the art. St. Regis Paper Co. v. Bemis Co. Inc. 193 USPQ 8, 11 (7<sup>TH</sup> Cir. 1977).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inputting device of Ikehara to include a plurality of sliding keys on the front surface of the elastic sheet and disposing each of the plurality of the sliding keys in a corresponding opening of a plurality of openings in the cabinet surface, in order to provide multiple control means allowing the device user to control the cursor on a display with a plurality of input means.

8. **Claims 18/1, 20/1, 22, 29, 45/22-49/22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Niiyama in view of Takatsuka et al. (US 2004/0080491, herein after “*Takatsuka*”).

Niiyama [fig. 3] teaches the sliding key having an outside surface.

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Niiyama does not expressly teach a concave part formed on the outside surface of the sliding key.

However, Takatsuka [fig. 21] teaches an inputting device comprising a sliding key ("89") having a outside surface on which a concave part is formed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sliding key of Niiyama to include a concave part on its outside surface, as taught by Takatsuka, in order to allow the device user of the inputting device of Niiyama to operate the inputting device more stably.

As to **claim 20/1**, Niiyama teaches the sliding key having an outside surface.

Niiyama does not expressly teach one or more projections formed on the outside surface of the sliding key.

However, Takatsuka [fig. 21] teaches an inputting device comprising a sliding key ("89") having a outside surface on which one or more projections are formed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the sliding key of Niiyama to include one or more projections on its outside surface, as taught by Takatsuka, in order to allow the device user of the inputting device of Niiyama to operate the inputting device more stably.

As to **claim 22**, all of the claim limitations have already been discussed with respect to the rejection of claim 1 except for a mobile terminal comprising the inputting device discussed in claim 1, a displaying means, and a first controlling means.

Niiyama does not expressly teach a mobile terminal including the inputting device, a displaying means, and a first controlling means.

However, Takatsuka teaches a mobile terminal including an inputting device [par. (0003)] and a first controlling means executing a first control corresponding to the moved direction of a sliding key of the inputting device detected by sensors of the inputting device [par. (0019) lines 5-9].



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Furthermore, Takatsuka inherently teaches the mobile terminal including a displaying means that displays information since it is required for Takatsuka's mobile terminal to include any kind of displaying means in order to display any image related to the movement of the sliding key.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to adopt Takatsuka's idea of using an inputting device in a mobile terminal and thus to use the inputting device of Niiyama as an inputting means for a mobile terminal, as taught by Takatsuka, in order to reduce the thickness of the sliding key of the mobile terminal and thus to simplify the construction of the device [Niiyama: abstract].

As to **claim 29**, all of the claim limitations have already been discussed with respect to the rejection of claims 2 and 3.

As to **claim 45/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 17.

As to **claim 46/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 18.

As to **claim 47/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 19.

As to **claim 48/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 20.

As to **claim 49/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 21.

9. **Claims 9/1, 10/9/1, 12/1, 22, 24, 27, 40/22, 41/22, and 43/22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikehara in view of Takatsuka et al. (US 2004/0080491).

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As to **claim 9/1**, Ikehara teaches the inputting device comprising a plurality of electrodes ("*direction electrode 11*" and "*input electrode 13*") [fig. 3] as sensors detecting the horizontal movement of the sliding key [col. 4 lines 45-53].

Ikehara does not expressly teach the sliding key including a magnet and sensors detecting the horizontal movement of the sliding key based on the change of the magnetic flux density from the magnet.

However, Takatsuka [fig. 21] teaches an inputting device comprising a sliding key ("*89*"), wherein:

a magnet ("*magnet 82*") is disposed in the sliding key, and

the sensors ("*magnet sensors 81*") detect the moved direction and the amount of the horizontal movement of the sliding key based on the change of the magnetic flux density from the magnet corresponding to the movement of the sliding key [par. (0143)].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the inputting device of Ikehara to use a magnet and sensors detecting change of magnetic flux density, instead of the plurality of electrodes of Ikehara, as a sensing means for detecting horizontal movement of the sliding key, as taught by Takatsuka, in order to simplify the structure of the electronic circuits required for building the sensors which detects a horizontal movement of the sliding key.

As to **claim 10/9/1**, Ikehara as modified by Takatsuka [Takatsuka: fig. 21] teaches an inputting device, wherein:

the sliding key provides a concave part (the space formed inside of the "*manipulation member 89*" which is taken by "*magnet 8Z*"),

the sliding key is adhered to the elastic sheet, and

the magnet is sealed in the sliding key.

Ikehara as modified by Takatsuka does not teach the concave part being located on a part of the surface where the sliding key is adhered to the elastic sheet.

However, Examiner submits that, as disclosed by the Applicants, the location of the concave part is not a factor required to accomplish the invention of the Application. Specifically, the Applicants disclose different design options for the location of the concave part in figures 4, 5, and 6 of the Application.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to place the concave part on either one of inside of the sliding key or on the surface of the sliding key where the sliding key is adhered to the elastic sheet, since any one of the locations of the concave part would perform equally well at storing the magnet of the input device.

As to **claim 12/1**, Ikehara as modified by Takatsuka does not expressly teach the sliding key including a coil and sensors detecting the horizontal movement of the sliding key based on the electromotive force generated by the electromagnetic induction by the movement of the sliding key in the magnetic field of designated power formed at the surrounding part of the coil.

However, since the Applicants have failed to disclose that including a coil instead of a magnet in the sliding key and using sensors detecting the horizontal movement of the sliding key based on the electromotive force generated by electromagnetic induction instead of a magnetic field, provides an advantage, is used for particular purpose, or solves a state problem, it is an obvious matter of design choice to use a coil and sensors detecting the movement of the sliding key based on the electromotive force generated by the electromagnetic induction.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include any one of a magnet and a coil in the sliding key and to use any one of the sensors detecting the movement of the sliding key based on changes on electromotive force or magnetic field,

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since any one of the components such as a coil and a magnet and the sensors would perform equally well at detecting the horizontal movement of the sliding key.

As to **claim 22**, all of the claim limitations have already been discussed with respect to the rejection of claim 1 except for a mobile terminal comprising the inputting device discussed in claim 1, a displaying means, and a first controlling means.

Ikehara teaches a first controlling means (“*controller*”) that executes first control corresponding to at least the moved direction of the sliding key in the horizontal directions detected by the sensors [col. 4 lines 45-53].

Ikehara teaches a displaying means (the display of the personal computer) [abstract line 19] that displays information.

Ikehara does not expressly teach a mobile terminal including the inputting device.

However, Takatsuka teaches a mobile terminal including an inputting device [par. (0003)] and a first controlling means executing a first control corresponding to the moved direction of a sliding key of the inputting device detected by sensors of the inputting device [par. (0019) lines 5-9].

Furthermore, Takatsuka inherently teaches the mobile terminal including a displaying means that displays information since it is required for Takatsuka's mobile terminal to include any kinds of displaying means in order to display any image related to the movement of the sliding key.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to adopt Takatsuka's idea of using an inputting device in a mobile terminal and thus to use the inputting device of Ikehara as an inputting means for a mobile terminal and to include a displaying means in the mobile terminal, as taught by Takatsuka, in order to provide a mobile terminal which can be operated by a disabled person with a declined muscular strength [col. 2 lines 5-12].

As to **claim 24**, Ikehara as modified by Takatsuka teaches a mobile terminal, wherein:

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the sensors detect the movement and the amount of the movement of the sliding key in the horizontal direction [Ikehara: abstract lines 14-20], and

the first controlling means (Ikehara: “*controller*”) executes the first control corresponding to the moved direction and the amount of the movement of the sliding key [Ikehara: abstract lines 14-20].

As to **claim 27**, Ikehara as modified by Takatsuka teaches the first controlling means executes the change of the position displaying a subject to be controlled on the displaying means [Ikehara: col. 4 lines 53-55].

As to **claim 40/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 9.

As to **claim 41/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 41.

As to **claim 43/22**, all of the claim limitations have already been discussed with respect to the rejection of claim 12.

#### *Allowable Subject Matter*

10. **Claims 5-8, 9/5, 11/5-21/5, 30-39, and 40/30-49/30** are allowed.

11. **Claims 11/1, 13/1-16/1, 23/22, 25/22, 26/22, 28/22, 42/22, and 44/22** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (572) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 25, 2007

- s.m.



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